

URTI Clinical Practice Guidelines

Definition

- Upper respiratory tract infection (URTI) is an inflammation involves the upper respiratory tract including the nose, sinuses, pharynx, larynx.
- Rhinitis, pharyngitis, sinusitis, common cold, otitis media, epiglottitis, laryngitis, and tracheitis are specific manifestations of URIs.
- URIs range from the common cold which is typically a mild, self-limited, to life-threatening illnesses such as epiglottitis.



Assessment (History and Examination)

Symptoms of: (URTI) VS. (Allergy) VS. Seasonal influenza (Flu)
according to National Institute of Allergy and Infectious Diseases (NIAID):

Symptom	Allergy	URTI	Influenza
Itchy, watery eyes	Common	Rare; conjunctivitis may occur with adenovirus	Soreness behind eyes, sometimes conjunctivitis
Nasal discharge	Common	Common	Common
Nasal congestion	Common	Common	Sometimes
Sneezing	Very common	Very common	Sometimes
Sore throat	Sometimes (postnasal drip); itchy throat	Very common	Sometimes
Cough	Sometimes	Common, mild to moderate, hacking cough	Common, dry cough, can be severe
Headache	Sometimes, facial pain	Rare	Common
Fever	Never	Rare in adults, possible in children	Very common, 100-102°F or higher (in young children), lasting 3-4 days; may have chills
Malaise	Sometimes	Sometimes	Very common
Fatigue, weakness	Sometimes	Sometimes	Very common, can last for weeks, extreme exhaustion early in course
Myalgias	Never	Slight	Very common, often severe
Duration	Weeks	3-14 days	7 days, followed by additional days of cough and fatigue



Examination:

1) General: Check for signs of acute respiratory distress.

2) HEENT/ Neck:

- Conjunctivitis.
- Bulging, erythema in tympanic membrane.
- Nasal turbinate swelling.
- Pharyngeal erythema, exudate.
- Enlargement of tonsils.
- Sinus tenderness (Sinusitis).
- Lymphadenopathy (cervical, post-auricular).
- Low grade fever (more common in children).

3) Chest:

- Lung auscultation: in patients with cough and breathing difficulties.

Management

(URTI) Workup and management:

- In upper respiratory tract infections, tests like (throat swab culture, and nasal swabs) for specific pathogens are helpful when targeted therapy depends on the results (eg, group A streptococcal infection, gonococcus, pertussis).
- Viral testing is rarely indicated for uncomplicated viral URIs in the outpatient setting. However, confirmation of a viral condition such as influenza may reduce inappropriate use of antibiotics.
- Testing may be required if progressive URI symptoms last longer than 14 days and have no other identifiable cause, such as asthma or allergic rhinitis.
- **Testing is also indicated if the clinical assessment suggests sexually transmitted disease–related oropharyngeal disease; specific therapy exists for pathogens such as *Neisseria gonorrhoeae*.**
- Viruses account for most URTIs. Appropriate management in these viral cases may consist of reassurance, education, and instructions for symptomatic home treatment. However, Bacterial primary infection or superinfection may require targeted therapy.



1. INFLUENZA:

General Measures


Rest, increased fluid intake, analgesics/antipyretics Reassurance

ANTIVIRAL:

the clinical benefit is greatest when treatment is initiated within 24 hours of symptom onset

Although anti-influenza drugs have been approved by FDA for use within 48 hours of symptom onset,

CDC and the IDSA recommend antiviral therapy for patients with severe or progressive illness, who are at high risk of influenza-associated complications, or who are hospitalized.

Is it a cold or flu? 		
Signs and Symptoms	Influenza	Cold
Symptom onset	Abrupt	Gradual
Fever	Usual	Rare
Aches	Usual	Slight
Chills	Fairly common	Uncommon
Fatigue, weakness	Usual	Sometimes
Sneezing	Sometimes	Common
Stuffy nose	Sometimes	Common
Sore throat	Sometimes	Common
Chest discomfort, cough	Common	Mild to moderate
Headache	Common	Rare

Prevention:

Vaccination

Infection Control

- Frequent hand washing
- Cover the mouth and nose while coughing or sneezing.
- Avoid touching the eyes, nose, and mouth.
- Avoid close contact with sick people.
- While sick, limit contact with others as much as possible to keep from infecting them



2. Pharyngitis:

Clinical features of acute pharyngitis by pathogen

	Pathogen	Relative frequency*	Associated clinical syndrome and/or symptoms
Bacteria	Group A <i>Streptococcus</i>	Common	Fever, tonsillar exudates, tender cervical lymphadenopathy, scarlatiniform rash, particularly in an adolescent or young adult
	Group C or G <i>Streptococcus</i>	Less common	Similar to GAS pharyngitis but more frequently acquired in a waterborne or foodborne outbreak
	<i>Arcanobacterium haemolyticum</i>	Less common	Similar to GAS pharyngitis, scarlatiniform rash common, particularly in adolescents and young adults
	<i>Fusobacterium necrophorum</i>	Uncertain	Lemierre syndrome (septic jugular vein thrombophlebitis), possible association with recurrent or persistent pharyngitis
	<i>Neisseria gonorrhoeae</i>	Likely rare	Nonspecific symptoms such as acute sore throat, pharyngeal exudates, and cervical lymphadenopathy in a patient with risk factors for sexually transmitted infections, particularly receptive oral intercourse
	<i>Corynebacterium diphtheriae</i>	Rare	Diphtheria: Low-grade fever, anorexia, malaise, sore throat with gray-white membrane on palate, tonsil or posterior oropharynx, cervical lymphadenopathy, particularly in a patient who has not been vaccinated
	<i>Mycoplasma pneumoniae</i>	Rare	Cough, pneumonia
	<i>Chlamydia pneumoniae</i>	Rare	Fever, cough, laryngitis, pneumonia
	<i>Treponema pallidum</i>	Rare	Secondary syphilis: Sore throat may precede development of mucosal ulcers, generalized lymphadenopathy and palmar-plantar rash
	<i>Francisella tularemia</i>	Rare	Ulceroglandular fever: Severe sore throat, pharyngeal exudes, cervical lymphadenopathy (often posterior and bilateral), oral ulcers; usually acquired by ingestion of contaminated water
Viruses	Respiratory viruses	Very common	Common cold: Fever, rhinorrhea, cough, hoarseness, coryza, conjunctivitis, oral ulcers
	Epstein-Barr virus	Less common	Infectious mononucleosis: Fever, fatigue, tender cervical lymphadenopathy, splenomegaly, lymphocytosis, particularly in an adolescent or young adult
	Herpes simplex virus	Less common	Severe sore throat, with or without oral ulcers
	Cytomegalovirus	Rare	Mononucleosis-like syndrome, similar to EBV but typically milder
	HIV	Rare	Acute retroviral syndrome: Fever, fatigue, lymphadenopathy, rash, myalgias, arthralgias, diarrhea, weight loss, painful mucocutaneous ulcers

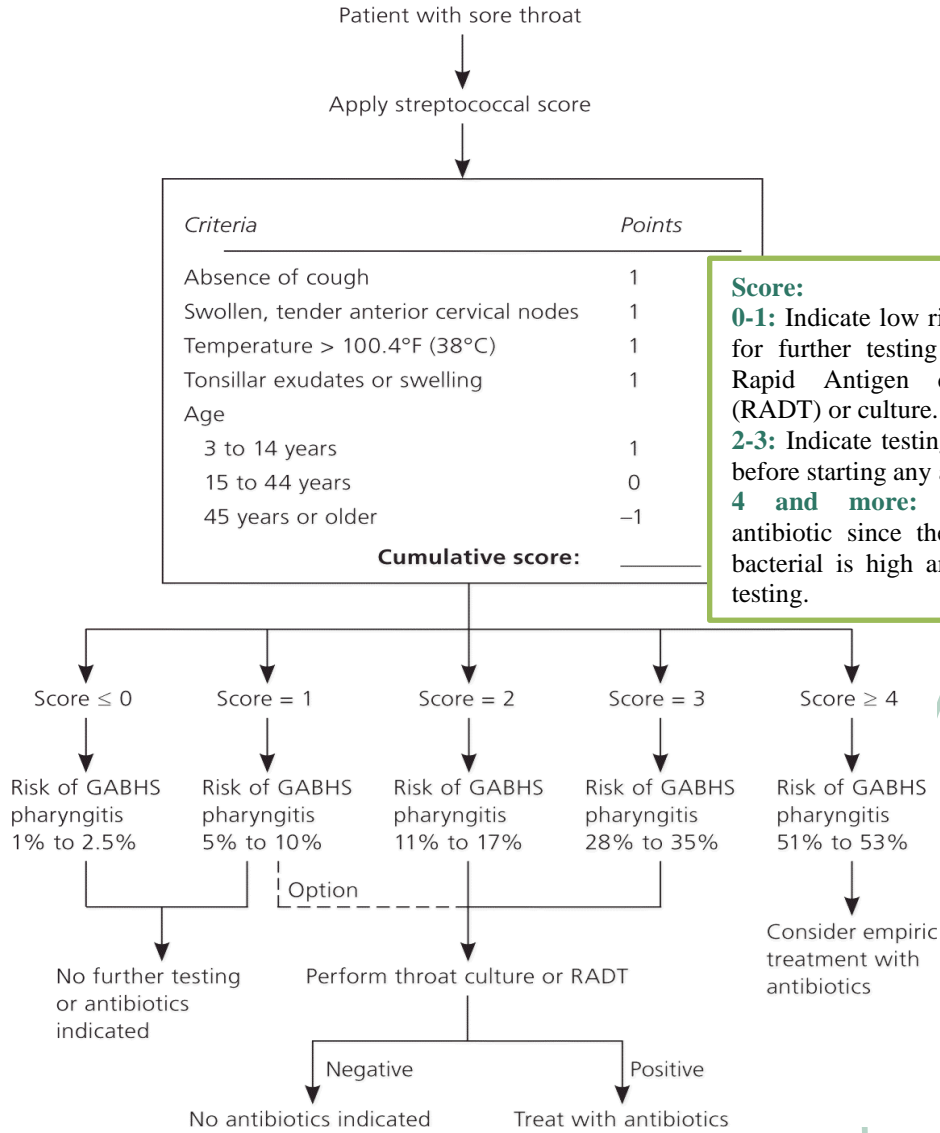
GAS: group A *Streptococcus*; EBV: Epstein-Barr virus; HIV: human immunodeficiency virus.

* The precise frequency of the etiologies of pharyngitis are not known. The designation of very common is used to indicate causes that are generally considered to exceed 25%, common to exceed 5%, less common to account for 1 to 5%, and rare <1%.

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Modified Centor's criteria:



Symptomatic Treatment for Acute pharyngitis

NSAID (Ibuprofen 200 to 400 mg)

- decreases acute sore throat pain up to 80% at two to four hours.
- ibuprofen produces a significantly **greater** reduction in sore throat pain compared with acetaminophen

Acetaminophen (Acetaminophen 1000 mg)

- decreases acute sore throat pain by approximately 50% after three hours

Aspirin

- Aspirin has effective sore throat relief from one through six hours.

Lozenges

- Provide quick-onset, short-duration relief of throat pain.



Table 3. Recommended Antibiotics for Treatment of GABHS Pharyngitis

Drug	Dosage	Duration	Cost*
First-line treatments			
Amoxicillin	Children: 50 mg per kg per day orally (maximum: 1,000 mg per day) Adults with mild to moderate GABHS pharyngitis: 500 mg orally two times per day Adults with severe GABHS pharyngitis: 875 mg orally two times per day	10 days	\$4
Penicillin G benzathine	Children < 60 lb (27 kg): 6.0×10^5 units intramuscularly Children \geq 60 lb and adults: 1.2×10^6 units intramuscularly	One dose	Varies
Penicillin V	Children with mild to moderate GABHS pharyngitis: 25 mg per kg per day orally, in two divided doses (maximum: 1,000 mg per day) Children with severe GABHS pharyngitis: 50 mg per kg per day orally, in two divided doses (maximum: 1,000 mg per day) Adults: 500 mg orally two times per day	10 days	\$5
Treatment for patients with type IV hypersensitivity to penicillin			
Cephalexin (Keflex)	Children: 25 to 50 mg per kg per day orally, in two divided doses (maximum: 1,000 mg per day) Adults: 500 mg orally two times per day	10 days	\$4 (\$190)
Treatments for patients with type I hypersensitivity to penicillin			
Azithromycin (Zithromax)	Children: 12 mg per kg per day orally (maximum: 500 mg per day) Adults: 500 mg orally on day 1, then 250 mg on days 2 through 5	5 days	\$10 (\$148)
Clarithromycin (Biaxin)	Children: 7.5 mg per kg every 12 hours (maximum: 500 mg per dose) Adults: 250 mg orally every 12 hours	10 days	\$23 (\$202)
Clindamycin	Children: 21 mg per kg per day orally, divided every eight hours (maximum: 300 mg per dose) Adults: 300 mg orally every eight hours	10 days	\$17

GABHS = group A beta-hemolytic streptococcal.

*—Estimated retail cost for one treatment course based on prices obtained at <http://www.goodrx.com> (accessed April 18, 2016). Generic price listed first; brand name in parentheses, if available.

Information from references 1, 3, 23, 24, and 28 through 35.



PARADISE CRITERIA FOR TONSILLECTOMY IN PAEDIATRICS AND ADOLESCENT

Minimum
sore throats
in a year

- Atleast **7** in the previous year
- OR Atleast **5** in each of **two** previous years
- OR Atleast **3** in each of **three** previous years

Sore throat
with *atleast*
one

- Fever > 100.9°F (38.3°C)
- OR Tender Cervical Lymphadenopathy of size > 2 cm
- OR Tonsillar exudate
- OR Culture positive for GABH (Group A β Hemolytic Streptococcus)

ANTIBIOTIC

- With administration of *adequate dosing of Antibiotic* for proven or suspected GABH infection.

3. Croup:

Mild:

seal-like barky cough but no stridor or sternal/intercostal recession at rest

• Moderate:

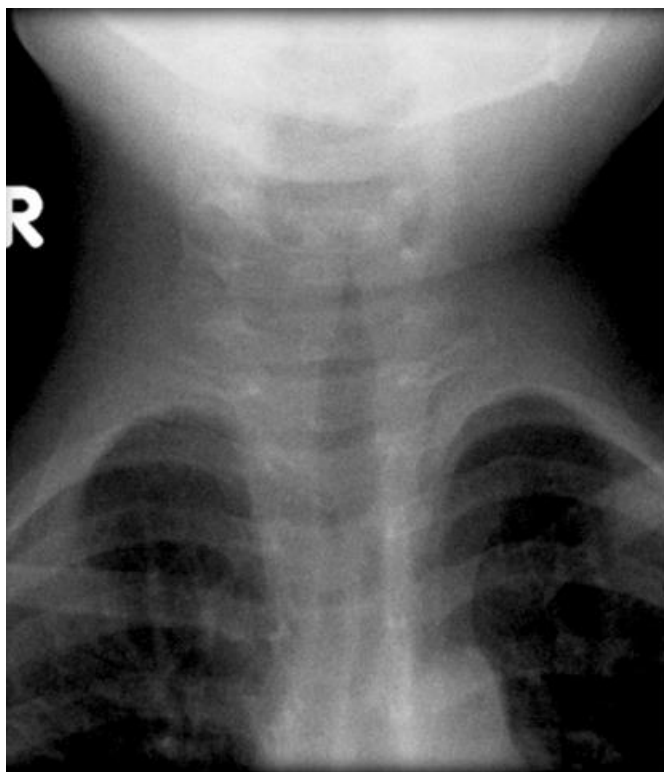
seal-like barky cough with stridor and sternal recession at rest; no agitation or lethargy

• Severe:

seal-like barky cough with stridor and sternal/intercostal recession, associated with agitation or lethargy



- Croup is largely a clinical diagnosis
- X-ray of the anteroposterior and lateral neck is not performed



The steeple sign
(narrowed trachea)

Acute (summary)	
mild (no stridor at rest)	1st corticosteroids + supportive care
moderate (stridor at rest; no agitation or lethargy)	1st corticosteroids + supportive care plus nebulised adrenaline (epinephrine)
severe (stridor at rest with agitation or lethargy)	1st corticosteroids + supportive care plus nebulised adrenaline (epinephrine) plus supplemental oxygen adjunct intubation

■ with impending respiratory failure



4. Epiglottitis:

Signs and symptoms that may indicate epiglottitis

Respiratory distress: stridor, tachypnea, anxiety, refusal to lie down, "sniffing" or "tripod" posture

Sore throat, dysphagia, drooling, anterior neck pain (at the level of the hyoid)

Muffled "hot potato" voice

Marked retractions and labored breathing indicate impending respiratory failure

Consider epiglottitis in

Febrile, toxic-appearing children with rapid onset and progression of dysphagia, drooling, and respiratory distress, especially if unimmunized

Management

Airway

Secure the airway, if time allows, in the operating room by anesthesia or otolaryngologist (artificially or surgically if necessary)

If abrupt obstruction:

Attempt bag-valve mask ventilation first

During laryngoscopy, pressure on the chest by an assistant may produce bubbling and help indicate the location of the glottis

Perform needle cricothyrotomy or surgical cricothyrotomy if unable to ventilate or intubate*

Laboratory studies:

Epiglottal cultures after establishment of artificial airway

Blood cultures after the airway is secured

Antimicrobial therapy

Administer empiric antimicrobial therapy:

Cefotaxime OR ceftriaxone

PLUS

Clindamycin OR vancomycin

Monitor

Monitor patient in the intensive care unit

* Needle cricothyrotomy may be performed on children of any age. The age at which one can safely perform a surgical cricothyrotomy on a child is not well established, and recommendations vary from 5 to 12 years old. Surgical cricothyrotomy is best performed in children in whom external landmarks of the neck (eg, the cricothyroid membrane) are easily palpable. (See "Needle cricothyrotomy with percutaneous transtracheal ventilation-1" and see "Surgical cricothyrotomy (cricothyrotomy)").



APPROVL			
	Name:	Position:	Signature:
Prepared By:	Dr. . Saira Al Qahtani	FM Senior Registrar	
Reviewed and Approved By:	Dr. Mansoor Allajhar Dr. Musa Althwayee Dr. Ahmed Al Zahrani Dr. Hajar Al Suma Dr. Ahlam Al Harbi	FM Consultants	

Adopted from;

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